

Multiple Responses Analysis using SPSS (Dichotomies Method) A Beginner's Guide

Donald Stephen
Institute of Borneo Studies, Universiti Malaysia Sarawak

Multiple response refers to the situation when participants are allowed to select more than one option for a question. An example of question that uses multiple responses analysis is as follow:

Please tick as many criteria you think are important in designing a phone:

- ☐ Price
- ☐ Color
- ☐ Materials
- ☐ Practicality
- ☐ Design
- ☐ Technical Specs

In this case, the participants are free to choose any number of criteria. If the participants think none of the options are important in designing a phone, they can choose not to select any. Therefore, researcher should note that not choosing any value should not be considered as missing values.

1. How to enter data?

I use the Mac version of SPSS so the interface might not be the same. There are some other ways to input the data and defining variable, but with dichotomy method, this is how you do it.

	Name	Type	Width	Decimals	Label	Values	Missing
1	Q1a	Numeric	8	0	Price	{0, not sele...	None
2	Q1b	Numeric	8	0	Color	{0, not sele...	None
3	Q1c	Numeric	8	0	Materials	{0, not sele...	None
4	Q1d	Numeric	8	0	Practicality	{0, not sele...	None
5	Q1e	Numeric	8	0	Design	{0, not sele...	None
6	Q1f	Numeric	8	0	Technical	{0, not sele...	None

Yes, for one question, you need to have 6 variables, depending on how many options you have. Type each option at the "Label" and leave the missing value blank. Now, when we talk about dichotomy, we know that it involves two things that are often the opposite of each other. In this case, it is your "Values". Put "0" as "not selected" and "1" as "selected". Put the level of measurement as nominal.

- (a) Data Entry: When the participants select "Materials", "Design" and "Technical", then put "1" in Q1c, Q1e and Q1f. The rest? Just leave it blank.
- (b) Handling missing values. You left plenty of blank space because you only enter "1" and not "0". If you are feeling hardworking, you can enter "0" manually, but as a lazy person I always find an easy way. You can substitute all the empty spaces with "0" using RECODE function. TRANSFORM -> RECODE INTO SAME VARIABLE, put Q1a – Q1f into "Variables" box, select "Old and New values"
Select "System-or-user-missing" and enter "0" at the "New value" section.
Continue, OK. "0" should replace all blank space.

	Q1a	Q1b	Q1c	Q1d	Q1e	Q1f	var
1	0	0	1	0	1	1	

2. Setting up multiple responses set

Now we want to group together Q1c-Q1f so that SPSS knows that it is actually a question with multiple responses.

Select DATA -> DEFINE MULTIPLE RESPONSES SET -> put Q1a to Q1f into “Variables in Set” box, in “variable coding” select Dichotomies with the counted value of “1”.

Define Set Name as “Question1” and in Set Label, type the entire question or something that implies the question. In this case, you can type “Important criteria in designing a phone”. Click “Add”.

If it was successful, you will be given this table:

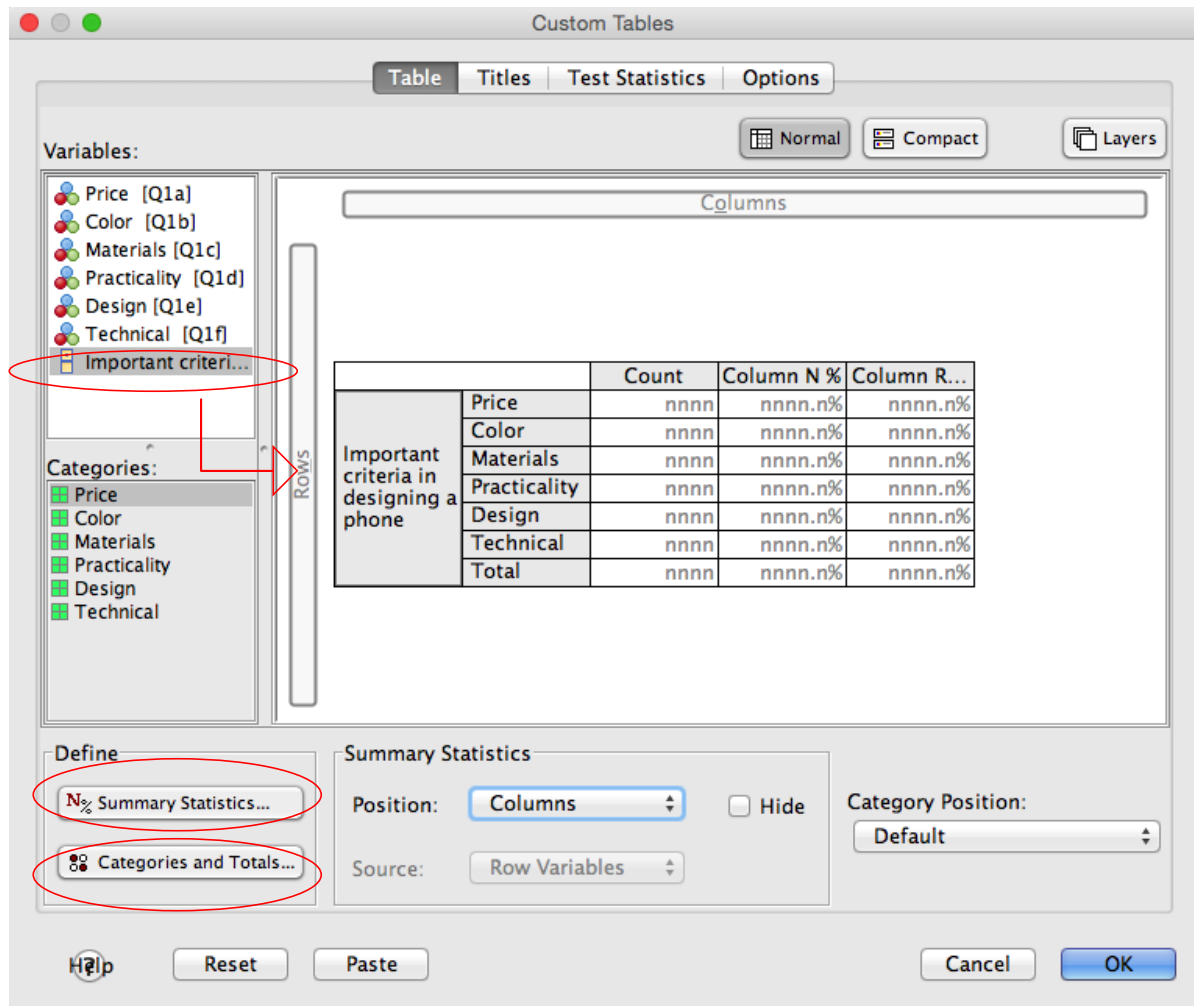
Multiple Response Sets

Name	Label	Coded As	Counted Value	Data Type	Elementary Variables
\$Question1	Important criteria in designing a phone	Dichotomies	1	Numeric	Price Color Materials Practicality Design Technical

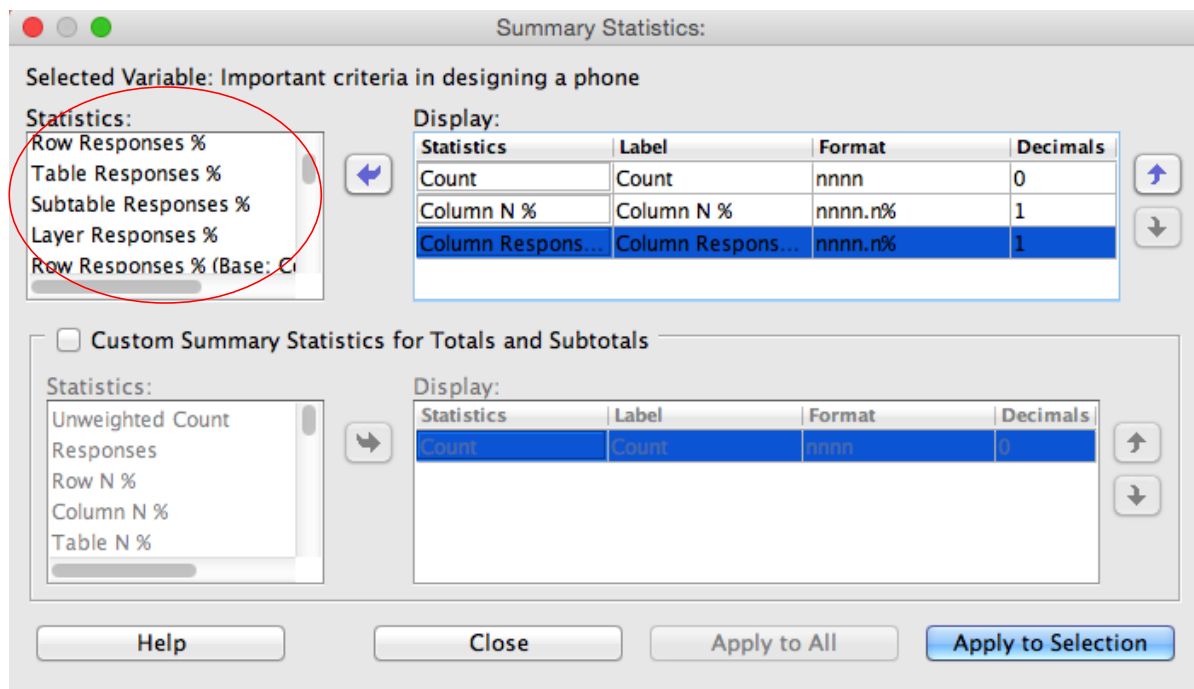
3. Analyzing Data.

OK. Here's the real deal (provided that you have entered all data of course).

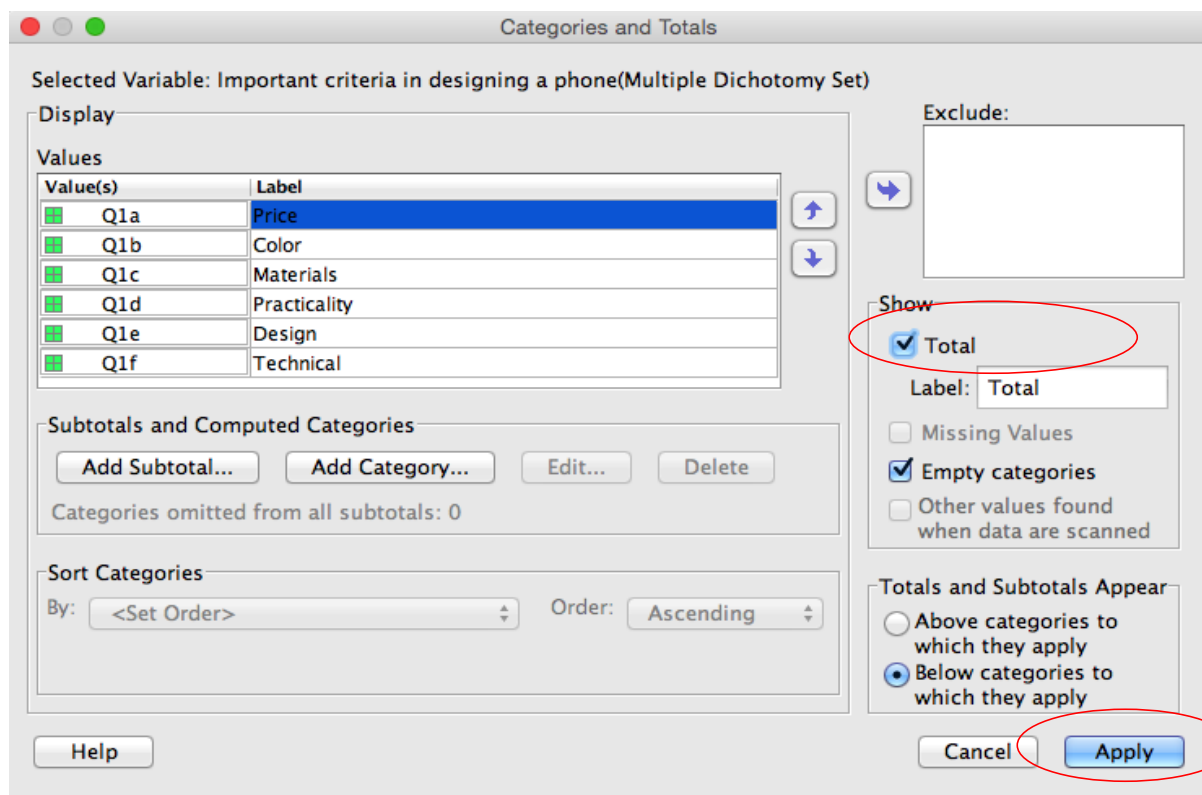
ANALYZE -> TABLES -> CUSTOM TABLES You will get a new window. Drag "important criteria..." into the "Rows" then click on "Summary Statistics button" then select "Column N%" and "Column Responses N%"



Here's how to select "Column N%" and "Column Responses N%". When you click on "Summary Statistics", this thing will appear. Find those two in "Statistics" box, then click the small arrow (or just drag to the left). Then, click Apply to Selection.



Click on “Categories and Totals”, you will get this pop out window. Tick “Total” then Apply.



Click OK, then you will get your result.

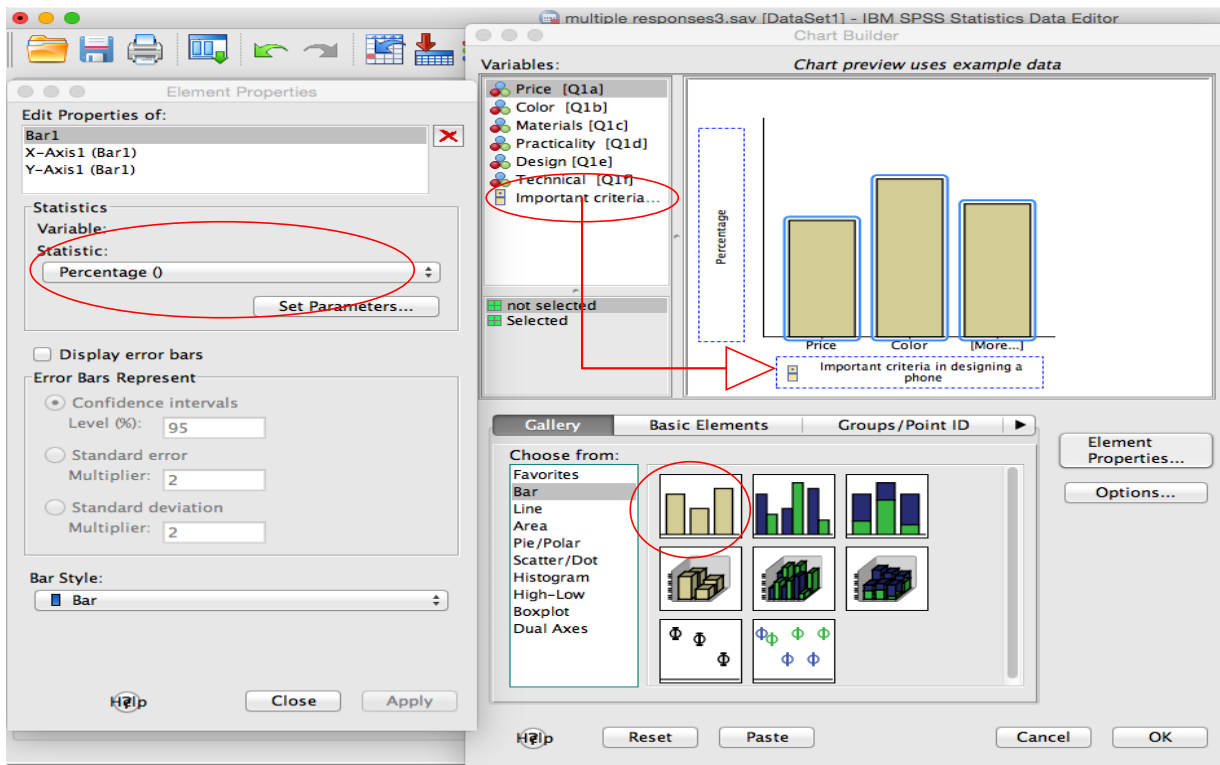
4. Interpreting Results

		Count	Column N %	Column Responses %
Important criteria in designing a phone	Price	13	19.7%	9.6%
	Color	8	12.1%	5.9%
	Materials	33	50.0%	24.4%
	Practicality	54	81.8%	40.0%
	Design	20	30.3%	14.8%
	Technical	7	10.6%	5.2%
	Total	66	100.0%	100.0%

I believe this result is far easier to comprehend as compared to other analysis. So, basically you have the count. Number of times your respondents selected each criteria. You have a total of 66 respondents who picked at least ONE criteria, and from the 66 respondents they have selected a total of 135 criteria ($13+8+22+54+20+7$). So we know that the respondents have picked at least one criteria. Note that you have 69 observations in your data set, it is because 3 participants did not pick any of the criteria.

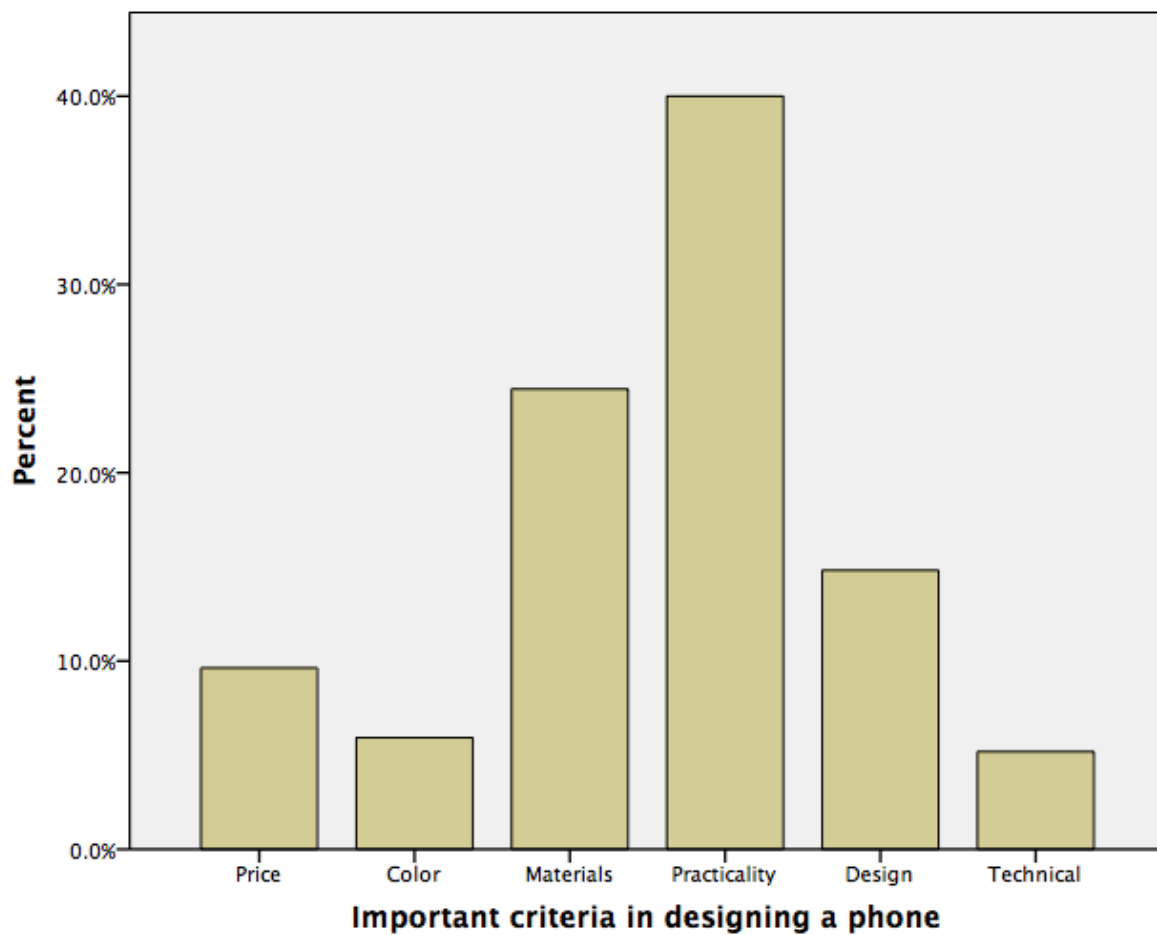
13 people selected “Price” as an important aspect in designing a phone. That is 19.7% of all people participated in the study ($13/66 \times 100 = 19.7\%$) but it is only 9.6% of all answers selected ($13/135 \times 100 = 9.6\%$).

Need a more beautiful presentation in addition to this table? You can also create a bar chart to represent these numbers. Go to GRAPHS -> CHART BUILDER...



Select Simple Bar chart and drag it into the box. Select your multiple responses set and drag it into x-axis. What to put in your y-axis? Up to you, really. By default it shows you the count. If you want something

else, like a percentage, you can also click on y-axis and select the option. For example, in this case I chose “percentage”. Click ok.



From the bar chart, we know that the highest attribute is practicality. Now we can visually see that many respondents agree that practicality is one of the important criteria in designing a phone.

-End-

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